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American Petroleum Institute
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# Monthly Statistical Report

Prepared by the Finance, Accounting, and Statistics Department

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## SUMMARY

September's total deliveries dropped nearly 7 percent from August's unusually strong levels, substantially more than the seasonal decline typically observed as the summer driving season ends. Deliveries in recent years have averaged a decline of 2 to 3 percent from August to September, before the main part of the heating season gets underway—which typically adds half a million B/D to overall deliveries versus the rest of the year.

However, the size of the month-to-month drop seems to be mostly a retreat from unusually strong deliveries in August; though hints of reduced consumption in response to higher prices are apparent for some fuels, total deliveries, when compared against a year ago, declined only 0.3 percent. The drop was essentially in line with the pre-August year-to-date decline trend of about half a percent (adjusted for warm winter weather early in the year).

While gasoline deliveries' decline of 1.5 percent was a bit more than the prior trend, distillate deliveries increased an above-trend 2.7 percent. Deliveries of kerosine jet fuel and residual fuel oil also rose, though residual fuel oil was up less than in previous months; deliveries of "other oils" reversed their recent prior increases.

Meanwhile, total imports, though roughly equal to those of last September, were down nearly 1 million B/D from levels of recent months, in part a lagged effect of the international embargo of Iraqi oil. Refinery runs continued high through most of September, with strong gasoline production, up about 3 percent over a year ago, boosting August's below-average inventories to near-typical levels by the end of the month. Distillate stocks rose 7 million barrels to 134 million barrels, a level slightly above average for September.

As a result of high refinery runs and the dip in crude oil imports, crude stocks fell a substantial 20 million barrels. Though, since the end of July, inventories of crude oil have dropped by 27 million barrels, they still were roughly 20 million barrels above the average level for recent Septembers. Domestic crude oil production continued to fall, dropping more than half a million B/D or 7.2 percent from last September. Both the lower 48 and Alaska shared in the decline.

## PRODUCT SUPPLIED [1]

### Gasoline

**DELIVERIES DROP 1.5 PERCENT.**

Gasoline deliveries fell 1.5 percent in September. Though it would be possible to ascribe this greater-than-typical decline solely to the inherent variability of monthly deliveries data, with average retail prices for the month up roughly 20% from July's levels, we believe that some demand response to higher prices may be apparent for gasoline.

Retail gasoline prices, which increased about 20 cents per gallon in August, rose roughly another 5 cents through the end of September—a smaller increase than that of crude oil, the price of which, despite volatile swings, continued to trend sharply upward. Starting at mid-June, when world crude prices began to rise as OPEC's pre-invasion production agreement was taking shape, cumulative increases in representative crude prices amounted to 10 cents a gallon by the time of the invasion, 27 cents by the end of August, and 56 cents by the end of September.

Based on historical relationships, we estimate that the increase in retail prices over the past two months would have led to a short-term response in consumption amounting to a 0.5 to 1 percent decline from levels which otherwise would have occurred. As it turned out, gasoline deliveries for the month were down substantially from the prior month's strong level —down more than 8 percent versus a typical seasonal drop of 5 or 6 percent. The year-to-year drop, though much smaller, still slightly exceeded the 0.9 percent decline for the year to date through July. Deviations of half a percent are well within the range of variability of monthly deliveries data, so September's deliveries decline can at best be said not to contradict the conclusion that some response to higher prices may be occurring.

Part of the demand response to higher prices likely also took the form of shifts among motorists' grade choices. Thus, premium unleaded, which had accounted for 22 percent of gasoline sales in July, has likely lost a point or two of market share to other grades.

| | API ESTIMATES SEPTEMBER | | YEAR-TO-DATE | |
|---|---|---|---|---|
| | Million B/D | Percent Change | Million B/D | Percent Change |
| Total domestic deliveries | 16.7 | (0.3) | 17.0 | (0.8) |
| Crude production[2] | 7.0 | (7.2) | 7.2 | (5.9) |
| Total imports[2] | 8.0 | 0.2 | 8.5 | 5.8 |
| Stocks (million bbl)[2] | 1,127 | 3.4 | na | na |

**Distillates**

**CONTINUING ABOVE TREND.** Distillate deliveries in September continued near August's unusually strong levels and rose 2.7 percent, year to year. This compares with the trend prior to Iraq's invasion of Kuwait, when year-to-date deliveries on a weather-adjusted basis had averaged only slightly ahead of a year ago (though actual deliveries had declined about 2 percent for the period). This suggests that the additions to storage by distributors and end users indicated in August's data may have continued in September.

Though September's deliveries were relatively strong for this time of year, in fact, September is normally one of the lower months of the year for distillate deliveries, averaging about 10 percent below annual levels. The peak of the heating season, December through February, has averaged about 25 percent above summer months in recent years.

Though annually, distillate deliveries average about half the volume of gasoline deliveries (which are seasonally higher during the summer months), the greater seasonal variation of heating oil and other heating-related petroleum fuels mean that total U.S. petroleum deliveries have averaged half a million B/D higher during the heating season than for the rest of the year.

Worldwide, seasonal variation tends to be greater, due to larger markets for heating fuels in proportion to gasoline. For the "non-communist" world, deliveries have averaged 2 to 3 million B/D higher over the fourth and first quarters than in the remainder of the year. Therefore, while the U.S. accounts for about a third of these nations' petroleum consumption, it only accounts for about a fifth of the seasonal variation.

**Residual Fuel Oil**

**DELIVERIES RISE, BUT LESS THAN FOR PRIOR MONTHS.** Residual fuel deliveries were up nearly 3 percent in September, a slower rate of growth than the 8 percent seen on average during the previous four months. Despite this growth, deliveries were still down 4.4 percent over the first 3 quarters. The moderating increases in residual fuel supplied during September accompanied modest increases in electricity generation and came with higher prices (which at month's end, were more than 75 percent higher than at the end of July).

Electricity generation was up by about 3 percent nationwide, but grew at a slightly slower rate in the New England and Mid-Atlantic states (typically heavy users of residual fuel). However, the beginning of a scheduled year-long shutdown at two nuclear facilities in Florida (a state whose utilities consume more resid than any other state except New York) could have contributed to increased fossil fuel burning in the state.

A June 1989 Energy Department report estimated that the short term potential for fuel switching from residual fuel to natural gas was (at that time) as much as 200 thousand B/D. By the time of the Iraqi invasion of Kuwait, however, that potential was no doubt lower. Presumably, because natural gas enjoyed a price advantage over resid even before the current crisis, most users with the ability to do the easiest switching had already done so. The 100 thousand B/D drop in resid deliveries over the first seven months of the year was due, at least in part, to fuel switching by industrial and utility users.

The potential for fuel switching could have been reduced further by seasonal factors, since natural gas for electric utility use is less readily available during the fall. Nevertheless, compared with the trend over the previous four months, September deliveries were off by about 50 thousand B/D, a possible indication of some further switching and conservation.

**Kerosine Jet Fuel**

**COMMERCIAL, MILITARY USE UP FOR SEPTEMBER.** Deliveries of kerosine jet fuel increased by 4 percent in September—a rate slightly below what would be expected given estimated growth in airline travel and increased military fuel deliveries. While the deliveries increase accompanied higher jet fuel prices, a variety of airline incentives encouraging September travel helped spur travel during the month. There were also above-normal military deliveries apparently used to replenish stocks drawn down during the August airlift to the Persian Gulf. These increased military deliveries accounted for nearly two-thirds of the increases seen in the month.

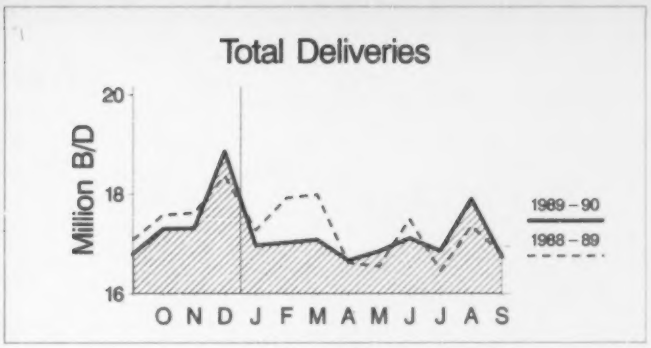
Domestic airline passenger travel has been sluggish in recent months. Adding to this sluggishness, many airlines announced fare increases following the recent rise in jet fuel prices. However, accompanying these fare increases, many airlines offered an assortment of discounts for immediate travel. Preliminary industry data on miles flown show growth at about 7-8 percent in September. As has been the case throughout the year, international flights continue to be responsible for much of the growth.

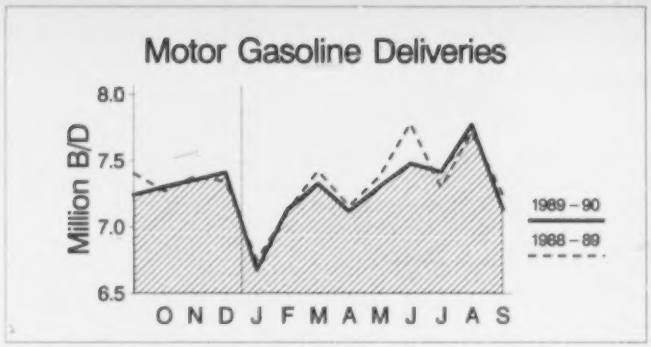
The Defense Fuel Supply Center reports that military acquisitions of kerosine-type jet fuel were up during the month. Much of the increase was met under existing contracts, (which, prior to the invasion, were reportedly being underdrawn by 30-35 percent of what was allowed), but fuel was also obtained through "supplementary" contracts. Based on this information and assuming that draws on "business-as-usual" contracts were 100 percent of what was allowed during September, military deliveries of kerosine jet fuel on these contracts increased by 22-25 thousand B/D. Supplemental contracts provided an additional 11-12 thousand B/D during the month for a total estimated at 33-37 thousand B/D.

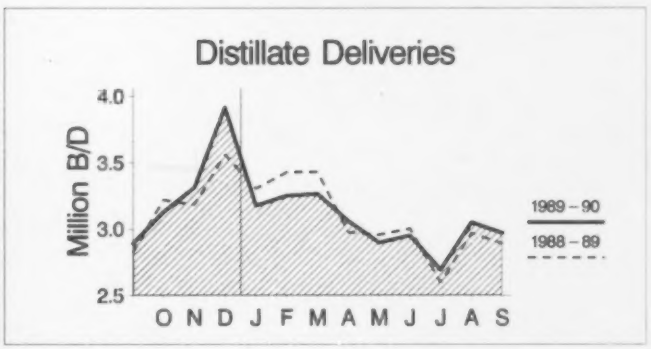
Naphtha-type jet fuel deliveries were up by about 50 thousand B/D (33 percent) over levels seen as recently as July. About two-thirds of the increase was satisfied through draws on existing contracts, with the remainder being satisfied by supplemental contracts.

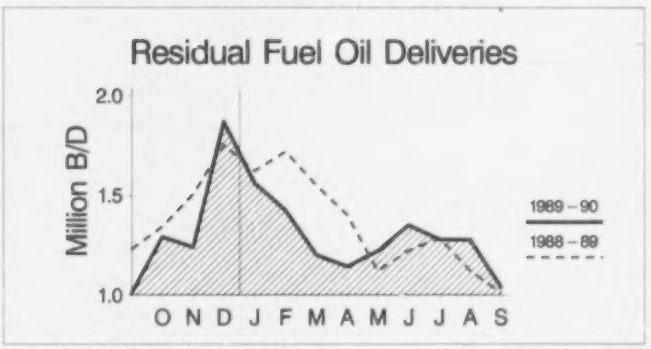
**Other Oils**

**DELIVERIES REVERSE PRIOR INCREASES.** Deliveries of "other oils", after two months of year-to-year increases, weakened substantially in September. Following increases of about 5 percent in July and 2.5 percent in August, deliveries for the month fell 2.0 percent. With increases that have averaged about 2 percent since April, September's decline was a clear departure from prior patterns, and possibly weaker than might have been expected.




## SUPPLY [1/]

### Production

**CRUDE OIL'S DECLINE CONTINUES.** Domestic crude oil production continued to decline in September, falling about 545 thousand B/D or 7.2 percent. In the lower 48, crude oil output dropped 342 thousand B/D or 6 percent, about in line with the year-to-date average, to 5.3 million B/D. In Alaska, about half of the 200 thousand B/D production decline was due to this summer's maintenance and upgrading projects to increment production.

Well completions showed continued year-to-year increases in the third quarter, rising about 9 percent, according to API's recently-released estimates. Oil completions have been gradually rising over the past year and a half from levels only about one quarter of those of the early 1980s. For the third quarter, they increased an estimated 19 percent year to year, with gains in both exploratory and development drilling. Even so, completions for the past twelve months of about 12,000 contrast with over 40,000 in 1981 and 36,000 as recently as 1985—when lower 48 crude oil production was nearly 2 million B/D higher than currently. Third quarter gas completions rose an estimated 12 percent, with the increase in development drilling outweighing a drop in exploratory wells.

### Imports

**DOWN CLOSE TO 1 MILLION B/D FROM PRIOR MONTHS.** After growing by close to 7 percent over the first 8 months of 1990, imports were essentially flat in September. With about a 45 day transit time for American-bound shipments coming from the Middle East, most of the crude leaving Iraq and Kuwait before the blockade is likely to have arrived by mid-September. At a little less than 8.0 million B/D, total imports were nearly a million barrels a day below July levels. Crude oil imports decreased from 6.8 million B/D in July to 6.6 million B/D in August and 6.0 million B/D in September.

Imports of finished gasoline slipped 18 thousand B/D to about 300 thousand B/D, at the lower end of the range for recent Septembers and a reflection of greater demand for incremental supplies outside the U.S. Distillate imports rose 40 thousand B/D to about 290 thousand B/D, near the upper end of their range for the same month in recent years. Meanwhile, with higher domestic output and high inventories, residual fuel oil imports dropped by more than 100 thousand B/D to 337 thousand B/D, their lowest level since March.

America has been getting relatively more of its crude than its products from Eastern Hemisphere countries. Through July of this year, about 57 percent of product imports (and nearly 80 percent of distillate imports) had come from the Americas (primarily Venezuela, the Virgin Islands, and Canada) while about 63 percent of crude imports had come from Eastern Hemisphere nations.

### Refinery Operations

**HIGH UTILIZATION CONTINUES IN SEPTEMBER.** The summer's high refinery activity continued strong into September. Input to distillation units rose 3.1 percent, year to year, while utilization of capacity in actual operation is estimated to have continued at around 95 percent, close to if not at the apparent practical maximum. Utilization of reported capacity was 92.4 percent for the month, up from 88.4 percent a year ago.

While gasoline output typically declines from August to September, September's output remained at nearly the same level as the prior month as gasoline inventories were replenished

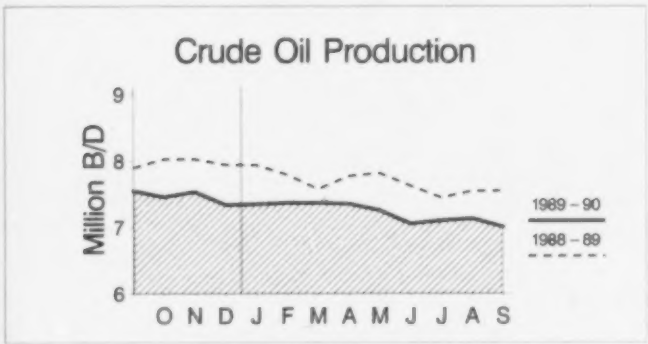
to levels closer to average for this time of year. Gasoline output rose 2.9 percent over last September's level, while kerosine jet fuel production rose 9.4 percent to over 1.3 million B/D. Though residual fuel oil yields were about the same as in prior months, output increased more than 10 percent from lower-than-typical levels a year ago. With distillate inventories slightly above average for this time of year, output of that product, though still relatively strong, rose only 0.3 percent.

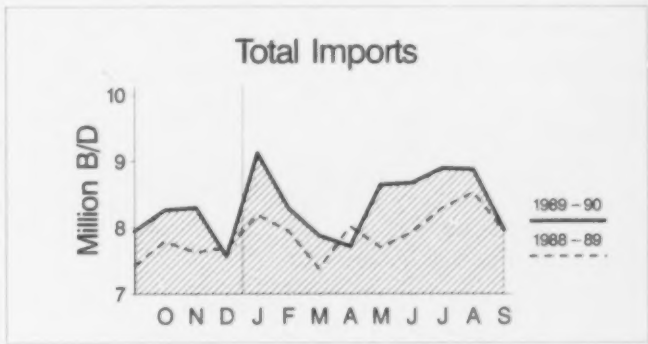
**Inventories**

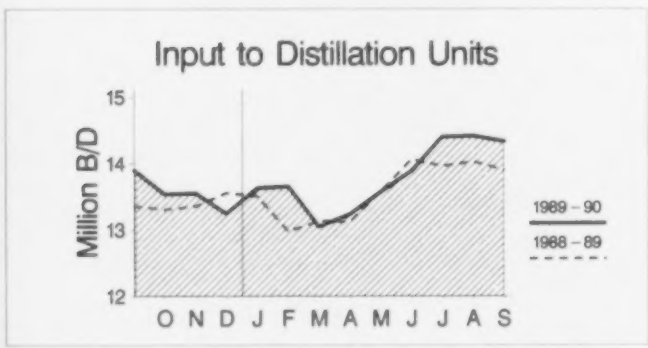
**CRUDE STOCKS FALL 20 MILLION BARRELS.** Total inventories rose 7 million barrels during September, about half the recent-year average for the month. With the month's strong refinery runs and the dip in crude oil imports, crude oil stocks, in particular, fell a substantial 20 million barrels. Although crude inventories have fallen by 27 million barrels in the past two months, at the end of September they still stood at 352 million barrels, roughly 20 million barrels above the average of the previous five Septembers.

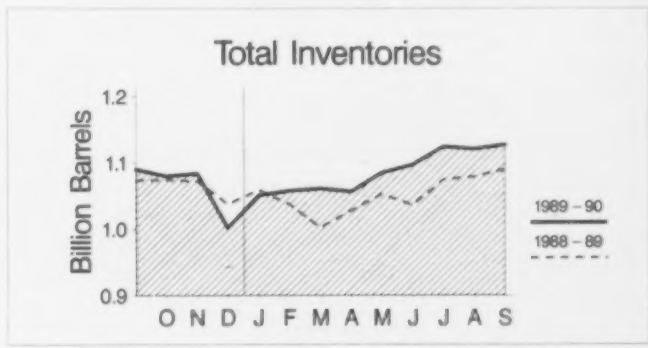
Distillate stocks increased a near-typical 7 million barrels for the month. At 134 million barrels, they were about 4 million barrels above the average September level of recent years. Gasoline stocks rose 14 million barrels from August's below-average level to 225 million barrels, close to typical recent September levels.

Residual fuel oil inventories, which rose another 2 million barrels during September, were at their highest level for the month in eight years, the result of strong refinery runs which more than counterbalanced the rise in deliveries and decline in imports.




1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 590 million barrels as of September 30, 1990).

## ESTIMATED UNITED STATES PETROLEUM BALANCE
### (Daily Average in Thousands of 42 Gallon barrels)

| Products Supplied/Supply From Primary Storage | SEPTEMBER | | | YEAR-TO-DATE | | |
|---|---|---|---|---|---|---|
| | 1990[1] | 1989[2] | % Change | 1990[3R] | 1989[3] | % Change |
| Products Supplied: | | | | | | |
| Total motor gasoline | 7,131 | 7,240 | (1.5) | 7,262 | 7,319 | (0.8) |
| Finished leaded motor gasoline/* | 340 | 797 | (57.3) | 415 | 903 | (54.0) |
| Finished unleaded motor gasoline/* | 6,791 | 6,443 | 5.4 | 6,847 | 6,416 | 6.7 |
| Naphtha-jet | 199 | 200 | (0.5) | 181 | 206 | (12.1) |
| Kerosine-jet | 1,369 | 1,316 | 4.0 | 1,306 | 1,253 | 4.2 |
| Distillate fuel oil | 2,968 | 2,889 | 2.7 | 3,032 | 3,057 | (0.8) |
| Residual fuel oil | 1,039 | 1,010 | 2.9 | 1,277 | 1,336 | (4.4) |
| All other oils[4] | 4,159 | 4,244 | (2.0) | 4,071 | 4,123 | (1.3) |
| Reclassified[5] | -128 | -104 | 23.1 | -106 | -139 | (23.7) |
| Total domestic products supplied | 16,737 | 16,795 | (0.3) | 17,023 | 17,155 | (0.8) |
| Exports | 749 | 655 | 14.4 | 761 | 830 | (8.3) |
| Total products supplied | 17,486 | 17,450 | 0.2 | 17,784 | 17,985 | (1.1) |
| Supply: | | | | | | |
| Domestic production: | | | | | | |
| Crude oil[6] | 7,004 | 7,548 | (7.2) | 7,219 | 7,671 | (5.9) |
| Natural gas liquids | 1,433 | 1,480 | (3.2) | 1,489 | 1,583 | (5.9) |
| Other supply[7] | 1,305 | 853 | 53.0 | 1,078 | 931 | 15.8 |
| Total domestic supply | 9,742 | 9,881 | (1.4) | 9,786 | 10,185 | (3.9) |
| Imports: | | | | | | |
| Crude oil, total[8] | 6,020 | 5,969 | 0.9 | 6,222 | 5,747 | 8.3 |
| Canadian | 697 | 668 | 4.3 | 643 | 641 | 0.3 |
| Other | 5,323 | 5,301 | 0.4 | 5,579 | 5,106 | 9.3 |
| Products, total | 1,941 | 1,975 | (1.7) | 2,236 | 2,246 | (0.4) |
| Residual fuel oil | 337 | 454 | (25.8) | 540 | 638 | (15.4) |
| Other | 1,604 | 1,521 | 5.5 | 1,696 | 1,608 | 5.5 |
| Total imports | 7,961 | 7,944 | 0.2 | 8,458 | 7,993 | 5.8 |
| Total supply | 17,703 | 17,825 | (0.7) | 18,244 | 18,178 | 0.4 |
| Stock change, all oils | 217 | 375 | ***** | 460 | 193 | ***** |
| **Refinery Operations** | | | | | | |
| Input to crude oil distillation units | 14,330 | 13,898 | 3.1 | 13,797 | 13,588 | 1.5 |
| Operable capacity | 15,516 | 15,722 | (1.3) | 15,522 | 15,689 | (1.1) |
| Refinery utilization (%)[9] | 92.4 | 88.4 | 4.5 | 88.9 | 86.6 | 2.7 |
| Crude oil runs | 14,151 | 13,791 | 2.6 | 13,622 | 13,431 | 1.4 |

| Stocks (millions bbls.) | 1990 | | 1989[2] | % Change from | |
|---|---|---|---|---|---|
| | Sep. 30[10] | Aug.. 31[10] | Sep. 30 | Previous Month | Year Ago |
| Crude oil[8] | 352.8 | 372.5 | 334.9 | (5.3) | 5.3 |
| Unfinished oils | 112.1 | 111.4 | 107.1 | 0.6 | 4.7 |
| Total motor gasoline/** | 224.7 | 210.6 | 226.7 | 6.7 | (0.9) |
| Finished leaded motor gasoline/* | 11.0 | 10.3 | 20.6 | 6.8 | (46.6) |
| Finished unleaded motor gasoline/* | 172.9 | 162.4 | 164.9 | 6.5 | 4.9 |
| Naphtha-jet | 6.1 | 5.9 | 6.8 | 3.4 | (10.3) |
| Kerosine-jet | 42.6 | 41.9 | 41.1 | 1.7 | 3.6 |
| Distillate fuel oil | 134.2 | 127.4 | 123.2 | 5.3 | 8.9 |
| Residual fuel oil | 51.1 | 49.4 | 49.4 | 3.4 | 3.4 |
| All other oils | 203.6 | 201.6R | 201.1 | 1.0 | 1.2 |
| Total all oils | 1,127.2 | 1,120.7R | 1,090.3 | 0.6 | 3.4 |

/1 Based on API estimated data converted to a monthly basis.
/2 Source: U.S. Department of Energy.
/3 January-July, DOE, August-September, API
/4 Includes crude losses.
/5 Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from the total domestic products supplied.
/6 API estimate; includes lease condensate.
/7 Includes Unaccounted-for crude oil, Processing gain and Field Production of other hydrocarbons and alcohol.
/8 Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
/9 Represents "Input to crude oil distillation units" as a percent of "Operable capacity".
/10 Derived by interpolating API weekly stocks data.
/R Revised.
/* Included in motor gasoline.
/** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.